DOCUMENT RESUME

ED 407 405 SP 037 321

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TITLE The Relationship of Preservice Teachers' Knowledge of Gender-Equitable Classroom Practices and Egalitarian Attitudes.
PUB DATE Feb 97
NOTE 11p.; Paper presented at the Annual Meeting of the American Association of Colleges of Teacher Education (49th, Phoenix, AZ, February 28, 1997).
PUB TYPE Reports - Research (143) -- Speeches/Meeting Papers (150)
EDRS PRICE EDRS Price MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS *Bias; Classroom Communication; Classroom Environment; *Classroom Techniques; Elementary Secondary Education; Equal Education; Feedback; Higher Education; *Knowledge Level; *Sex Bias; *Student Teacher Attitudes; Teacher Student Relationship
IDENTIFIERS *Egalitarianism; Preservice Teachers; *Teacher Knowledge

ABSTRACT

This document reports on a study to examine the relationship of prospective teachers' egalitarian attitudes or "beliefs about the equity of males and females in school or university settings." Research focused on the extent of preservice teachers' knowledge about gender-equitable classroom practices and egalitarian attitudes. Study participants were 758 preservice teachers at 3 large Midwestern universities. The preservice teachers were sampled during their required student teaching orientation session. Analysis of the data revealed that overall preservice teacher knowledge of gender equitable classroom practices was generally low. For example, preservice teachers knew that the English language is inherently biased, but they did not know how language affects students' thinking and application in the context of learning. Also, while preservice teachers knew that in general males get more feedback that enhances higher level thinking, they did not know that females often get feedback that results in low ability messages. Study findings also indicated that individuals with egalitarian attitudes were more likely to have acquired knowledge of gender-equitable classroom practices and to use those practices in their day-to-day teaching. (Contains 23 references.) (ND)

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ED 407 405

THE RELATIONSHIP OF PRESERVICE TEACHERS' KNOWLEDGE OF GENDER-EQUITABLE CLASSROOM PRACTICES AND EGALITARIAN ATTITUDES

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Paper Presented at 49th AACTE Annual Meeting
Phoenix, Arizona
Friday, February 28, 1997
12:30 p.m.

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The Relationship of Preservice Teachers' Knowledge of Gender-Equitable Classroom Practices and Egalitarian Attitudes

Although there has been national recognition of inequity based on gender for over two decades, disparate educational outcomes which contribute to male and female stereotypical life roles predicated on the accident of gender persist (AAUW, 1992; Mullis, et al., 1991). Stereotypical roles influence many boys to pursue unrealistically high career goals (Sadker & Sadker, 1994; Grossman, 1994) and on average, women's earnings are lower than men's earnings even when women have more education (U.S. Dept. of Labor, 1994). Teachers day-to-day practices with students, which are influenced by their attitudes and beliefs, are at the heart of gender-affirmative change (Pryor, 1996). According to Eccles (1989), knowledge of the existence of sexism, sensitivity to evidence of it, and a desire to counteract it are prerequisites to any effort to make a classroom environment gender-equitable. Researchers believe that the teacher education curriculum is a logical intervention point for addressing bias in K-12 education (AAUW, 1992; Grant & Secada, 1990; Sadker & Sadker, 1994). Thus while gender equity is a required component of the AACTE program standards, recent studies regarding gender-equity programs revealed that the inclusion of gender equity instruction in preservice teacher education programs is minimal to moderate, varies from instructor to instructor, and is frequently infused into methods courses or multicultural/human relations courses (Mader, 1994; Wilson, 1993).

The purpose of this study was to examine the relationship of prospective teachers' egalitarian attitudes or "beliefs about the equality of males and females in school [or] university settings" (King & King, 1993, p. 19) and knowledge of gender-equitable classroom practices (i.e. classroom practices that eliminate all sex-related bias in interaction and participation patterns, classroom management and organization patterns, and student expectations to ensure that all male and female students develop to their fullest human potential (Pryor, 1996). Two research questions asked were:

1. To what extent are preservice teachers knowledgeable about gender-equitable classroom practices?

2. Is there a relationship between preservice teachers' knowledge of gender-equitable classroom practices and egalitarian attitudes?

More specifically, the study asked preservice teachers to respond to a gender-equitable classroom practices knowledge assessment, an egalitarian attitude scale, and a demographic instrument.

Subjects

The subjects of the study were 758 preservice teachers at three large Midwestern universities of whom 96% had attended high school in the Midwest. An instrument was designed to determine the impact of the teacher education course of study on the preservice teachers' knowledge of gender-equitable classroom practices. The preservice teachers in the sample were attending their required student teaching orientation session.

Of the 758 subjects, 214 subjects identified themselves as males and 529 subjects identified themselves as females. Fifteen subjects gave no response regarding gender. The ethnic background of the 758 subjects is listed in Table 1.

Table 1

Number of Preservice Teachers by Ethnic Background

Caucasian	AfricanAm	Hispanic	AsianAm	NativeAm	No Response	Total
540	37	16	10	7	148	758

A chi-square goodness of fit analysis with the 1993-1994 population of practicing teachers (Statistical Abstract, 1995, p. 77) revealed there were no differences on the variables of either gender or ethnicity between the sample and the teacher population. See Table 2 and Table 3.

Table 2

Chi-Square Male/Female Goodness of Fit of 1993-1994 Teacher Population and Sample

Group	Male		Female	
	N	%	*N*	%
Total Sample	214	28.8	529	71.2
Population	694,098	27.1	1,867,195	72.9
$X^2 = 1.09$, *DF* = 1=3.84				

*$p < .05$. Results = *ns*.

Table 3

Chi-Square Ethnic Goodness of Fit of 1993-1994 Teacher Population and Sample

Group	AfricanAm		NativeAm		AsianAm		Caucasian		Hispanic	
	N	%	*N*	%	*N*	%	*N*	%	*N*	%
Total Sample	37	6.1	7	1.1	10	1.6	540	88.5	16	2.6
Population	188,371	7.4	20,064	0.1	27,510	1.1	2,216,605	86.5	108,744	4.2
$X^2 = 8.29$, *DF* = 4= 9.49										

*$p < .05$. Results = *ns*.

Design

This was a quasi-experimental study utilizing quantitative and qualitative methods. Three instruments were used in the study, an instrument to determine sex-role egalitarian attitudes, a researcher-developed demographics instrument, and a researcher-developed instrument to assess knowledge of gender-equitable classroom practices.

Since attitudes often have "predictive value" (Borg & Gall, 1989, p. 311), the Sex Role Egalitarianism Scale form BB (SRES-BB), a 5-point Likert scale instrument, measuring "attitudes toward equality between the sexes" (Beere, 1990, p. 516) was selected to examine the relationship of sex-role egalitarianism and knowledge of gender-equitable classroom practices. The SRES-BB contains 25 items in five domains of sex-role egalitarianism: marital roles, parental roles, employment roles, social-interpersonal-heterosexual roles and educational roles. Based on Cronbach's alpha, the internal consistency of the SRES-BB was estimated at .91 in the pilot study.

In preparation for the study, the Assessment Regarding Classroom Practices (ARCP) was created using gender equity literature as the foundation for the questions (Pryor, 1996). Three major categories of gender-equitable classroom practices were addressed in the preparation of the instrument:

1. Expectations or "inferences that teachers make about the future behavior or academic achievement of their students, based on what they know about these students now" (Good & Brophy, 1987, p. 116).

2. Interaction which applies to the teacher-initiated dialogue between teacher and student (Pryor, 1996).

3. Classroom management and organization which refers to how the teacher groups students and selects or creates activities within the learning environment that facilitate the learning process (Pryor, 1996).

The questions were reviewed by a jury of five experts in the area of gender equity and the final instrument containing 37 true/false/unsure response items was pilot-tested using a sample of 103 preservice teachers from a university not included in the study.

Based on Cronbach's alpha, the instrument had .84 internal consistency reliability estimate. Forty-five minute classroom observations were also conducted during the second half of a 15-week student teaching experience to explore the validity of the instrument using a total of seven pilot subjects (four high scoring and three low scoring). Using an informal seating chart on which the gender of each student was identified, interactions were recorded with behavior codes and tally marks, and percentages of various interactions were calculated by gender. Notes and/or quotes from preservice teachers and the students were written on an observation worksheet with a list of major

concepts covered in the ARCP instrument. Although both groups of student teachers exhibited some inequitable classroom practices, the four high-scoring student teachers exhibited more gender- equitable classroom practices and better classroom management skills than did the three low-scoring student teachers.

A general description of the sample was determined by collecting demographic data such as race, gender, area of specialization, etc. The data from this instrument were used to compare the sample subjects to the national picture of teachers in the field.

These same three instruments were administered at an introductory session of the student teaching experience at each university during a 30-minute interval. At two of the universities, the researcher was on site to describe the study, to answer questions, and to administer and collect the instruments. At the third university, the researcher described the study and the instruments to university supervisors. The supervisors were given background information on the study and written directions for administration, including the same verbal directions which were used with the other two universities. At the two universities where the researcher was present unanticipated exit comments from the sample were recorded by the researcher.

Results

1. To what extent are preservice teachers knowledgeable about gender-equitable classroom practices?

While sample preservice teachers were aware of general aspects of gender equity, overall preservice teacher knowledge of gender-equitable classroom practices is generally low. The mean, median, range and standard deviation for the ARCP are listed in Table 4 below.

Table 4

Mean, Median, Range, and Standard Deviation for the ARCP

ARCP	*N*	Mean	Median	Range	*SD*
Total	758	18.34	18.27	32	6.17

A frequency distribution of the scores for the ARCP revealed that only 7.3% of the sample preservice teachers correctly answered 75% or more of the items. Likewise, on average preservice teachers in this study correctly answered fewer than 50% of the items on the ARCP.

In preparing the ARCP instrument, three knowledge level questions were matched with three application level questions A greater percent of preservice teachers responded correctly on the knowledge level questions than responded correctly on the application level questions (see items 1 and 34, 3 and 18, and 5 and 32 in Table 5). For example preservice teachers knew that the English language is inherently biased, but they did not

know how the language affects students' thinking and application in the context of learning. Likewise, preservice teachers knew that in general males get more feedback that enhances higher level thinking, but preservice teachers did not know that females often get feedback that results in low ability messages.

Matched items examining similar factual content generally revealed comparable percentages of correct responses as shown in items 14 and 19, 23 and 36, and 25 and 37 of Table 5. In other words, preservice teachers knew that stereotyping is influenced by beliefs and attitudes. They were also aware of the greater amount of interaction received by males in the classroom and the bias that can be found in curriculum materials. All of these areas have had a national focus of attention within the past several years.

However, preservice teacher gave a greater percentage of incorrect answers than correct answers when asked about equity in mathematics or equity for gifted females and African American females. Further, fewer than 60% of the preservice teachers were aware of subtler forms of bias such as the disparity in the number of reprimands of males and females and the disparity of classroom task assignments between males and females.

Finally, 88% of the preservice teacher sample correctly answered item 3, an interaction question revealing a basic awareness of the differences in the amount of attention given to males and females. Over 82% of the preservice teacher sample correctly answered item 19, an expectation question revealing awareness that student achievement is influenced by teacher attitudes and perceptions regarding gender.

Table 5

Percent of Correct Responses, Means, and Standard Deviations for Each Set of Matched Questions (n=758)

Matched Questions	% Correct Responses	Standard Deviation
#1	76.3	0.43
#34	42.2	0.49
#3	87.7	0.33
#18	45.8	0.50
#5	61.9	0.49
#32	26.3	0.44
#14	78.0	0.42
#19	82.7	0.38
#23	56.9	0.50
#36	60.7	0.49
#25	60.0	0.49
#37	60.0	0.49

On the demographic instrument, preservice teachers commented on the source of their knowledge and attitudes regarding gender-equitable classroom

practices. Respondents were asked to identify any sources of knowledge and attitudes that applied. Results are shown in Table 6

Table 6

Classes/Experiences Impacting Preservice Teachers' Knowledge and Attitudes Regarding Gender-Equitable Classroom Practices by Percent (n=758)

Classes/Experiences	*N*	% of Sample
Teacher education	289	38.1
Multicultural education	174	23.0
Women's studies	42	5.5
Major/minor classes	182	24.0
Self-education	157	20.7
Nonacademic sources	117	15.4
Specific course or professor	116	15.3

While 38% of the respondents identified teacher education classes/experience as a source of their knowledge, 35% identified either self education or nonacademic sources.

2. Is there a relationship between preservice teachers' knowledge of gender-equitable classroom practices and preservice teachers' egalitarian attitudes?

The Spearman rho (r_s) correlation coefficient revealed a weak, but positive correlation ($p < .05$) of knowledge of gender-equitable classroom practices with egalitarian attitudes (see Table 7). Thus, in this sample, individuals with egalitarian attitudes are more likely to have acquired knowledge of gender-equitable classroom practices.

Table 7

Spearman Rho Correlation of Scores on the SRES and the ARCP

	SRES-BB and ARCP
	r_s
Sample	0.14*

*$p < .05$.

Conclusions and Recommendations

Preservice teachers are exiting university teacher education programs with a minimal level of knowledge about gender-equitable classroom practices (Pryor, 1996). These results corroborate findings in studies of the 1980s, and more recently by Martin and Lock (1991) in a study of preservice physical education teachers. Wilson (1993) found that 45% of the universities responding to a survey (with a 37% response rate) on gender-equity program inclusion had a component in the teacher education program. In Michigan, Mader (1994) found that institutions had minimal to moderate levels of gender-equity instruction and that instructors believed that students did not want to learn about equity. It is no wonder that there is a minimal level of knowledge of gender-equitable classroom practices.

Yet gender cuts across all other groups in our society as each individual's gender is predetermined before birth. In order to achieve success for all students--a democratic necessity, preservice teachers' gender equity knowledge and attitudes, as well as other equity areas of knowledge, should be molded through the teacher preparation program.

Teacher education programs play a critical role in helping teachers develop the skills needed to address issues related to gender bias in the classroom. A committee of involved teacher educators should develop a plan of action for gender equity. The plan should assure that gender-equity issues are infused in every subject area, since varying subjects must address gender issues from a unique perspective. Infusion cannot be left to personal preference or option, but must be a part of a university program committed to gender-equitable classroom practices. Standardization of program content at elementary and secondary certification levels will help assure infusion.

University program leaders and faculty should be committed to developing and implementing an infusion program in which gender-equitable classroom practices are taught and modeled. At the very least, each preservice teacher should develop an understanding of equity issues and how equity affects social and economic development of individuals. Further, upon exiting the teacher education program, preservice teachers should be able to describe a philosophy of equity reflecting a basic gender-equity knowledge and egalitarian attitudes.

Preservice teachers who are knowledgeable about gender-equitable classroom practices are more likely to utilize those practices in their day-to-day classroom teaching, especially when encouraged to do so. The effect of the critic teacher on the preservice teacher in the student teaching setting cannot be overlooked. What is modeled and valued by the critic teacher will be modeled and valued by the student teacher, or in other words, we teach the way we are taught. Placement of student teachers with critic teachers who know and practice gender-equitable classroom practices is essential.

Preservice teachers who are knowledgeable about gender-equitable classroom practices are also more likely to have egalitarian attitudes (Pryor, 1996). Results from both sample respondents and pilot-test respondents revealed that the higher the score on the ARCP, the higher the score on the SRES-BB. Further, results from the pilot-test subjects revealed that the higher the score on the ARCP, the more likely that the individual would implement gender-equitable behaviors in student teaching. These findings corroborate research which indicated that teachers' attitudes on a gender topic improve when the teachers become more knowledgeable about the topic (Erickson-Ruckle, 1984; Keyes, 1992; Martin & Koppelman, 1991). An individual must be open to learning about gender-equitable classroom practices in order to learn and implement these practices. Thus, knowledge acquired in a workshop or in college courses has the power to change attitudes and behavior (Beauvais, 1986). The transfer of gender-equity concepts into lesson planning and actual practice is corroborated by Nelson (1990), Grayson (1985), and Sleeter (1989).

Looking to the future and educational reform, teachers with knowledge of gender-equitable practices and egalitarian attitudes will enhance the overall equity climate of the school. They will be able to take a leadership role within their schools that could improve outcomes for all students. Some of these same teachers will become administrators who will be knowledgeable about gender-equitable classroom practices and will be modeling egalitarian attitudes and moral leadership in their selection of staff and induction processes. The cycle of knowledge or lack thereof is continuous, but begins in the teacher education program of each university.

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